



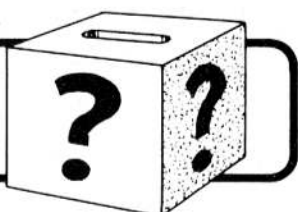
# NUCLEAR DIVISION NEWS

A Newspaper for Employees of the Nuclear Division, Union Carbide Corporation

Vol. 6 - No. 1

January 9, 1975

## QUESTION BOX



If you have questions on company policies, benefits, etc. or any other problems with which we might help, just let us know. Drop your inquiry to the Editor, **Nuclear Division News**. (Or telephone it in to your plant news representative.) You may or may not sign your name. It will not be used in the paper.

Questions are referred to the proper authorities for accurate answers. Each query is given serious consideration for publication.

Answers may be given to employees personally if they so desire.

**QUESTION:** Since all other parking lots at X-10 are lined off, why are we of the South Portal lot discriminated against? Several drivers take up enough room for two spaces, and one VW driver got so disoriented last Thursday that he parked crossways. Could we please have a little paint to line up these "parking thieves" so we can all have more space?

**ANSWER:** There was really no intent to discriminate against you Southerners! But, you are right. The South portal lot isn't adequately marked to assure good parking. This will be corrected.

**QUESTION:** Were job bids for No. 18 really referred to an outside personnel service for "handpicking" of a minimum of six for interviews? Is Personnel so very busy that an interview (token, of course) could not be granted to the remaining (some 20) applications received? Were supervisors contacted to see if they were willing to let their secretaries actually be considered?

**ANSWER:** Job Bid No. 18 was for a Senior Secretary for a manager in the Technical Division located at Y-12 and there were 23 bidders. Preliminary screening was done, as usual, by the Y-12 Personnel Office, not by any outsiders. Six applicants were referred to the manager involved and were interviewed by him. Additional interviews were not considered necessary. One applicant was selected to fill the vacancy. No supervisors were contacted to see if their secretaries could be considered. Under the system, the individual, not the boss, makes this decision by indicating interest in the opening.

**QUESTION:** Since employees are asked to sign the performance rating sheets completed by supervision at the time of the annual personnel interview, wouldn't it seem that these should be completed in ink, instead of pencil?

**ANSWER:** It is not a consistent practice throughout the Nuclear Division to have employees sign their annual appraisals. Where this is done, we agree that the rating sheets should be typed or completed in ink.

(Editor's Note: We have had several questions about the impact of the new pension reform law on the Company's Pension Plan. This question is a typical one:

**QUESTION:** How will the new pension bill recently signed by President Ford affect the Carbide retirement plan?

**ANSWER:** The law officially titled "Employee Retirement Income Security Act of 1974" became effective September 2, 1974. It is an extremely complicated piece of legislation which will be administered by both the Department of Labor and the Department of the Treasury. Each of these agencies is in the process of preparing regulations for the implementation of the act. Pending receipt of the regulations, the Company is studying the act but no actions can be undertaken nor questions answered with authority until the regulations are issued.

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## Safety incentive plan changed for Division

The Safety Incentive Plan for the Nuclear Division has been modified, effective January 1.

The new plan, designed to stimulate more interest in safety among Division employees, features a more frequent award period and escalating values for continuing accident-free performance.

Thirty days of continual operation in any of the four installations without a disabling injury constitutes an award period. The period begins the day after a lost-time injury. An annual award will be made following the end of the calendar year to all eligible employees in an installation based on the accumulation of the 30-day award period funds shown in the following table:

### Cumulative Award Funds

Consecutive 30-Day Award Periods	\$/Employee Award Period Total	Cumulative \$/Employee
1-3	1	3.00
4-6	1.50	7.50
7-9	2	13.50
10-12	2.50	21.00

### Next Issue

The next issue will be dated January 23. The deadline is January 15.

## Interest rate up in PLA earnings

The guaranteed effective annual interest rate in the Fixed Income Fund of the Personal Investment Account has been increased, according to an announcement from Union Carbide's New York Office.

The guaranteed interest rate for 1974 was 7.75 percent. For 1975 it will be 8.35 percent.

The Fund also guarantees minimum interest rates over a period of years. This has been for an effective annual interest rate of not less than 6.5 percent through December 31, 1978. The Corporate Benefit Plans Department now advises, "We now have a guarantee that the rate will never be less than 7.5 percent."

Any period over the 13-month or more mark would accumulate at the rate of \$2.50 per unit.

The safety awards will be in the form of merchandise items selected by each employee from a list which has been pre-selected by the Installation's Awards Committee. The monetary award value of the initial award period began at the beginning of 1975, and will be based on the number of consecutive injury-free award periods achieved immediately prior to January 1.

Portions of 30-day award periods which occur at the end of the calendar year following this plan's beginning, will be carried into the subsequent year.

To be eligible for the annual award, an employee or retiree must be on the

active payroll at the end of the last 30-day award period of the calendar year.

The Safety Departments at the Y-12 Plant, Oak Ridge and Paducah Gaseous Diffusion Plants, and the Health Physics and Safety Department at the Oak Ridge National Laboratory, will maintain records, certify award periods and secure and distribute the safety awards.

The Installation Central Safety Committee is responsible for appointing members for the Awards Committee and for approving decisions and procedures of that committee. The Awards Committee will be responsible for selecting the merchandise items.

### SPECIAL NOTE

Is your mailing address correct? Are you receiving the **Nuclear Division News**? Is it consistently late? Let us know if there is a problem. We want you to get every issue on time.



# Human cell repair mechanisms subject of Biology study

By Robert Wesley

Since the beginning of life on earth, living creatures have suffered at least temporary cell damage or chemical change from one of the very forces necessary to sustain life - the sun. Along with its light and warmth, the sun emits ultraviolet and ionizing types of radiation which are known to damage the cell DNA, the intricate assembly of nucleic acids which compose a cell's reproductive system.

Fortunately, humans and most other species possess a built-in repair mechanism within the individual cells. When ultraviolet or ionizing radiation damage a cell, routine emergency procedures go into operation in an attempt to repair the damage. The repair mechanism is not an easy process to understand, because the DNA is such a complex structure. It consists of four acid bases - guanine, adenine, cytosine and thymine - arranged in hundreds of different combinations throughout a double helix structure.

## Two repair methods

Only in recent years have biologists begun to understand some of the complicated repair and reproductive operations performed by the DNA. As they unravel these mysteries, researchers should gain a better understanding of how and why certain cell diseases and mutations originate and perhaps obtain clues that ultimately will lead to the treatment or cure of a variety of ailments.

For the past four years, research by James D. Regan of ORNL's Biology Division, along with Richard B. Setlow (formerly of ORNL and now with Brookhaven National Laboratory), has provided valuable fundamental information regarding the sequence of actions which occur within a cell DNA when it undergoes repair. Research associates are William Carrier, Fred Faulcon, Bill Lee and Andy Francis. Through extensive experimentation, the research team has

been able to characterize two types of DNA repair systems in human cells. No matter what the damaging agent may be, the DNA will use one or sometimes both of the two systems of repair.

## Began in 1971

To obtain a better understanding and appreciation of this discovery, it is necessary to look at the early tests performed by Regan and Setlow in 1971. Using human cell cultures in their experiments, they were able to determine that ultraviolet radiation of a sufficiently high level causes a specific type of cell damage and sets off a sequence of repair operations. Ionizing radiation, however, caused a different type of DNA damage and sequence of repair.

Regan explained, "When we exposed cells to a wavelength of 254 nanometers of UV light, a lesion (Pyrimidine dimer) was induced in one strand of the DNA. An enzyme known as UV-endonuclease initiated the repair sequence by putting a nick in the DNA near the lesion. An exonuclease enzyme then excised the lesion along with 80 to 100 bases. Polymerase inserted 80 to 100 new bases and the enzyme polynucleotide ligase closed the strand. This method of repair required about 10 to 20 hours and is referred to as the 'long' repair sequence.

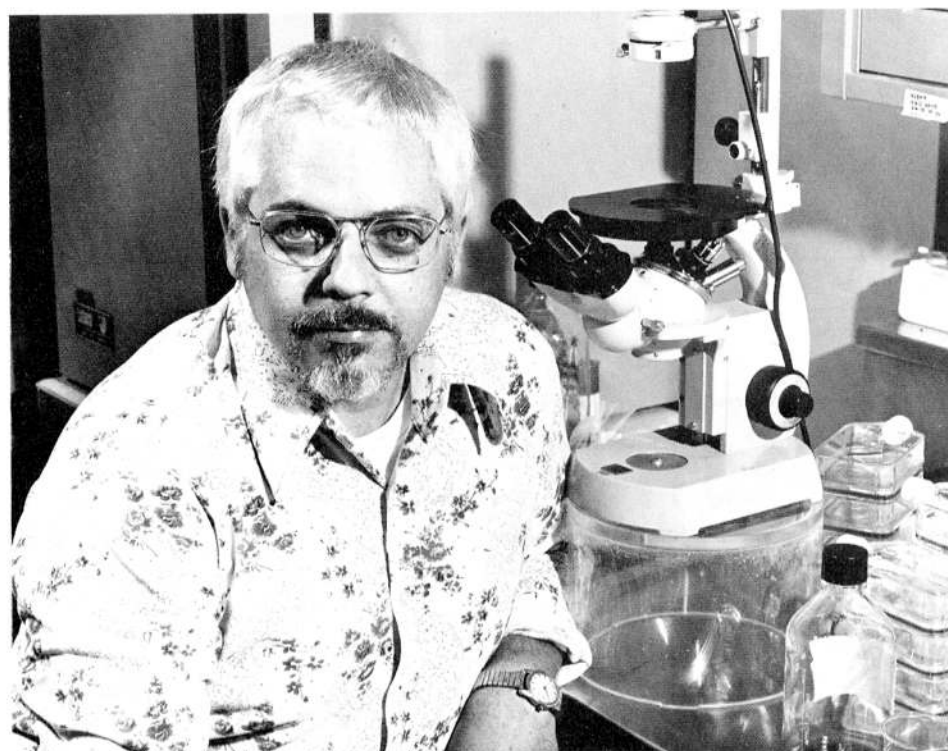
"We found that a different sequence of repair was used when cells were struck by ionizing radiation. A break in the DNA strand was caused immediately. The exonuclease excised only three or four of the DNA bases, the polymerase added the same amount of bases and ligase closed the break. The operation was completed in 60 minutes or less and is referred to as the 'short' repair sequence."

## Tested various agents

After numerous experiments proved the validity of the test procedure and the findings, Regan and Setlow decided to expose human cell DNA to a variety of agents known to cause mutations or cancer. After testing 15 agents, they were surprised to discover that the same repair mechanisms previously found for UV and ionizing radiation were used by cells to repair the damage caused by exposure to chemical agents. No new repair sequences were found.

"We were very surprised at the results," Regan said. "It was so convenient. Anything we tested which would damage cellular DNA would trigger the same two previously established mechanisms. We originally had thought we would encounter new, more complex repair modes with the chemicals."

Although the discovery is important primarily for the fundamental information established, Regan believes that it will lead to a better understanding of human disorders at the cellular level. Supported by a contract with the National Cancer Institute, Regan and his research associates will test additional carcinogenic and mutagenic agents to determine the type of repair mechanism they initiate. Through



**HUMAN CELL RESEARCH** — James D. Regan, Oak Ridge National Laboratory's Biology Division, and his research associates, have determined that human cell DNA has two sequences of repair. The finding makes possible the characterizing of mutagens and carcinogens according to the type of repair mechanism they initiate within a cell. Richard B. Setlow, now at Brookhaven National Laboratory, collaborated on the work.

these tests, they hope to establish a new way of characterizing carcinogens - by the type of repair sequence and time required for repair.

## XP disease

In addition to providing this fundamental information, the experiments may provide more direct assistance in understanding a disease known as xeroderma pigmentosum (XP), a skin disease which consists of an ultrasensitivity to the UV wavelengths of light. Persons afflicted develop skin encrustations and heavy pigment spots and eventually multiple skin cancers over all exposed portions of the body.

"This disease is relatively rare," Regan said. "Probably no more than 200 - 300 persons in this country suffer from this disease, so statistically it

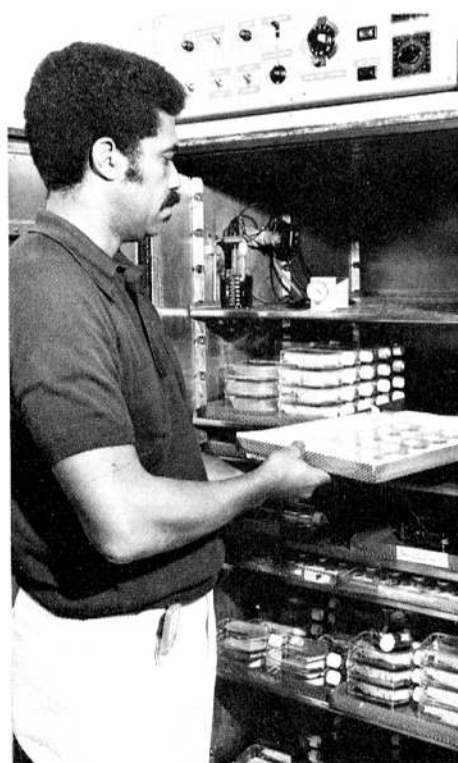
may not seem important unless one happens to be a victim. But it is significant in what it implies that cells must be doing in persons who do not have the disease, that is, everyone else."

According to Regan, persons with XP disease apparently lack the enzyme UV-endonuclease which initiates the "long" type of DNA repair sequence. Lacking this enzyme which can repair DNA damage caused by UV radiation, more and more cells suffer change and permanent damage until the carcinomas develop.

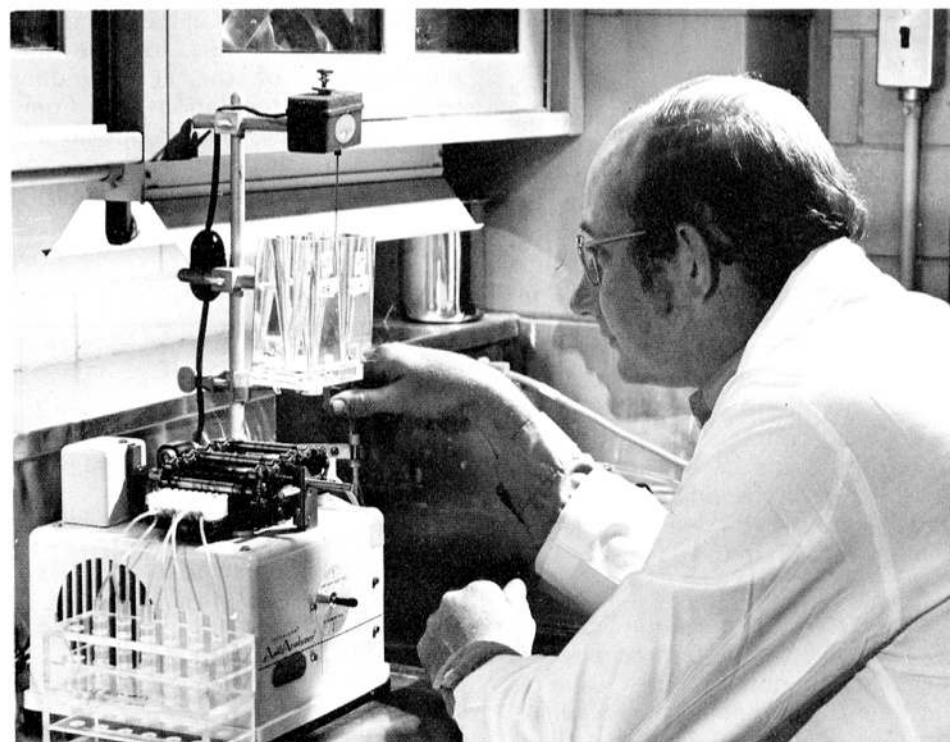
## Albinism study

He also hopes to explore the DNA repair mechanisms of persons who suffer from albinism. At present, he is interested in a tribe of Cuna Indians

(Continued on page 10)



**INCUBATOR** — Fred Faulcon stores human cell cultures in an incubator designed to regulate temperature, humidity and other factors necessary to maintain the cells' life and growth.



**DNA ANALYSIS** — Andy Francis, ORNL's Biology Division, operates a proportional pump that makes gradients for analysis of DNA components.





**LABORATORY ON WHEELS** — This tractor-trailer rig is packed with pilot scale equipment for testing hyperfiltration, a water purification process being used in a project aimed at cleaning up textile wastes in North Carolina. At left, Arthur J. Shor, Chemistry Division, and James Denton, Plant and Equipment, prepare the trailer for departure. At right, Warren Sisson, Chemical Technology, and Virginia Lee, Environmental Sciences, demonstrate the "before and after" effect of using the hyperfiltration process in preliminary tests.

## Hyperfiltration system to aid textile industries

The Industrial Revolution was born with the advent of the first textile mills in the early 19th century. Today the textile industry is having major problems meeting rising environmental standards.

In South Carolina, textiles have grown to be the giant of the state's manufacturing industry - but the chemicals and dyes of the manufacturing process frequently end up in nearby streams. A "laboratory on wheels" on loan from Oak Ridge National Laboratory will soon be rolling across the South Carolina highways to test a water purification process called hyperfiltration, or reverse osmosis. The mobile unit will be used by Clemson University researchers, aided by Neva E. Harrison, Warren G. Sisson and C. Gary Westmoreland from ORNL, for on-site testing of hyperfiltration at seven textile mills across the state.

The hyperfiltration technique uses membranes capable of removing not only suspended particles, but also a

substantial fraction of dissolved impurities. Conservationists will be glad to know that in addition to purifying the water the process can yield recovered chemicals and dyes and, in some cases, energy when hot water can be directly recycled at process temperatures. A dynamic membrane developed as part of ORNL's Water Research Program, directed by James S. Johnson of the Chemistry Division, will be tested along with commercially developed membranes. In addition to its purification capabilities, the dynamic membrane is important because the purified water can be recycled hot.

Good results have already been achieved using hyperfiltration in pilot studies at LaFrance Industries of Riegel Textile Corporation where both the purified wastewater and recovered dye have been reused in the production of automotive and furniture upholstery fabrics.

Clemson is conducting the year-long project on textile waste management for the S.C. Textile Manufacturers Association, which has received a \$145,000 grant from the U. S. Environmental Protection Agency. Participating textile plants will contribute laboratory equipment and personnel.

### NUCLEAR DIVISION NEWS

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**QUALITY ASSURANCE** is...

**having a plan - and using it.**

## Linda Neal named supervisor of job analysis for division

158201

Linda N. Neal had been named supervisor of job analysis for the Nuclear Division, according to an announcement by Joseph E. Smyrl, Manager of Salary Administration.

A native of Oak Ridge, Mrs. Neal joined Union Carbide in 1971 in the Oak Ridge National Laboratory's wage and salary administration. She holds a B.S. degree in economics from The University of Tennessee and has done most of the required work for a M.B.A. in industrial management. For the past three years, she has worked in Y-12's salary program.

In her new position she will direct the activities of a staff of job analysts who will be responsible for the review of employee functions in an effort to achieve and maintain equity of job classification usage throughout the division.

Reporting to Mrs. Neal will be Luther B. True and Janice H. Wing. Their offices are located in Building 9720-6 in the Y-12 Plant.

Mrs. Neal and her husband, David, live at Route 1, Barkmoor Drive,



Linda N. Neal

Lenoir City. He is general manager of the J.R.N. Kentucky Fried Chicken Company.

### Savings Plan-Personal Investment Account

Recent unit values:

	Fixed Income Fund	UCC Stock	Equity Investment Fund
August 74	10.77	42.00	6.26
September 74	10.85	38.41	5.43
October 74	10.92	38.41	6.69
November 74	10.98	42.37	6.58

Note: Fixed Income Fund unit values reflect interest additions to achieve the guaranteed effective annual interest rate of 7-3/4% for 1974. Union Carbide stock values are the average cost of stock purchases during the month plus brokerage charges. Equity Investment Fund unit values represent the month-end market value of securities held by the Fund. Dividing the total value by the number of units in the fund establishes the month's unit value - and the price at which new units are added that month.

### WANTED



#### ORNL

CAR POOL members from Waddell, West Outer or Pennsylvania Avenue areas, Oak Ridge, to East or North Portal, 8:15 a.m. shift. Tom Burnett, plant phone 3-6939, home phone 483-1975; or Dick Reed, plant phone 3-1801, home phone 483-3458.

#### ORGDP

RIDE from Edgemoor Road to Portal 4, straight day. Mary Grubb, plant phone 3-9225, home phone Claxton 945-2596.

#### ENERGY CONSERVERS

Close draperies at night or on cloudy days. Open when there is plenty of sunshine.

Close off rooms not in use, and turn the heat off there. No need to heat unused space.

Make sure refrigerator and freezer doors close tightly. Inspect gaskets to make sure they fit properly.

## W. V. Leidigh named captain at Paducah

Woodrow V. Leidigh has been named a fire and guard department captain at the Paducah Gaseous Diffusion Plant.



Leidigh

A native of Cairo, Ill., Leidigh joined Union Carbide in 1951, after working with the Muskogee (Okla.) Ford Company. He attended schools in the Southern Illinois area, and took special training

with the Illinois State Police.

Leidigh lives at 519 35th Street, Cairo, with his wife, Anna. They have two children, Rebecca and Roger.

### COMMUNITY CALENDAR

#### January 11

Oak Ridge Civic Music Association concert series: Levin and McGraw (duo pianists). Oak Ridge High School Auditorium, 8:15 p.m. Admission: adults \$5; students \$2.50.





ORGDP HOLIDAY HAPPENING DANCES IN THE HOLIDAY SEASON



## Division Retirees



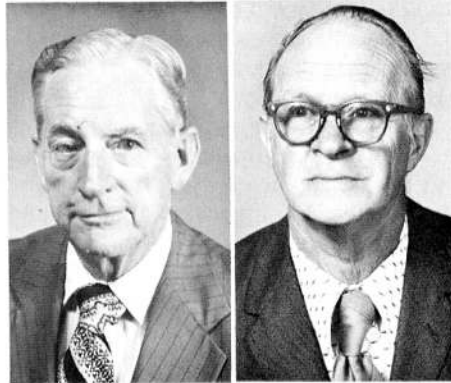
Francke

Dunlap

Two well known Y-12ers retired last month, in addition to the many reported in the last issue of **Nuclear Division News**.

James E. Dunlap, building services department, ended a 24-year career. He retires to his home at 110 Columbia Drive, Powell.

Harry C. Francke, Development Division, joined Union Carbide in 1951. A long-time member of the Oak Ridge City Council, Francke lives at 201 Manhattan Avenue.



Willoughby

Sluss

Charles H. Sluss, an operator in Chemical Operations, retired at the end of December. He joined Union Carbide in 1944, and lives in Oliver Springs.

Robert C. Willoughby, a design engineer in the Engineering Division, came to ORGDP in 1949. He retired at the end of 1974 to his 313 Snowbird Drive, Route 5, Knoxville, home.

## ASNT hold dinner meet January 14

The Oak Ridge Section of the American Society for Nondestructive Testing will meet January 14 at the Alexander Motor Inn, Oak Ridge.

The guest speaker will be Gary White, DICOMED Corporation, Minneapolis, Minn., who will speak on "Digital Image Processing."

Dinner will be served at 7 p.m., preceeding the program. Reservations may be made, before January 13, through Fred Mindt, Y-12, extension 3-5265; Robert McClung, ORNL, 3-6283; Jim Smith, ORGDP, 3-9303; or Cleve Porter, Knoxville 947-8814.



Roberts

Calhoun

The New Year saw four more retirements from the Oak Ridge Gaseous Diffusion Plant.

Felix W. Calhoun, a foreman in Fabrication and Maintenance, retired January 1, after 31 years with Union Carbide. He lives at 5610 Parkdale Road, Knoxville.

Earl Roberts, a chemical operator in the Operations Division, will retire at the end of this month, ending a 30-year career with UCC. He lives on Crepe Myrtle Lane, Knoxville.

## PATENTS Granted

To Fred J. Hurst and David J. Crouse, ORNL, for "Oxidative Stripping Process for the Recovery of Uranium from Wet-Process Phosphoric Acid."

To Harvey A. Mahlman and Warren G. Sisson, ORNL for "Cross-Flow Filtration Process."

To Roland P. Hammond, Santa Monica, Calif., formerly of ORNL, for "Interceptor for Preventing Ship Collisions with Off-shore Power Stations and the Like."

# Jacobs' son chosen as Carbide scholar

Richard D. Jacobs, son of Mr. and Mrs. Sheldon C. Jacobs, 100 Wilderness Lane, Oak Ridge, has been selected to attend a Washington Congressional Workshop as a Union Carbide Scholar.

Jacobs was recommended for the honor by the faculty of the Oak Ridge High School. His nomination was supported by Union Carbide Corporation's Nuclear Division.

As a recipient of the honor, Jacobs will participate in a seminar April 20-27, 1975. Participants are housed at Mount Vernon Junior College where most of the seminar sessions will be conducted.

The curriculum for the seminar will include classes, discussions with members of Congress, attendance at House and Senate Chamber sessions and committee meetings, and talks by Cabinet members and other national leaders, both in and out of government.

Jacobs, a junior at Oak Ridge High School, is Vice President of the Student Council and Treasurer of the International Relations Club. Last year he was President of the sophomore class.

As a Union Carbide Scholar, the full cost of Jacob's participation in the Congressional Seminar program is being defrayed by Union Carbide Corporation.

## FORMER Y-12ER DIES

Paul J. Johnson Sr., a former Y-12 Maintenance Division employee, died December 27 in the Oak Ridge Hospital. He worked in Y-12 from 1951 until he took an early retirement in 1969. Mr. Johnson is survived by his wife, Sue A. Johnson; daughters, Doris Carpenter, Joyce Bradford, Vickie Brown, and Rose Ann Johnson; sons, Paul J. Jr. and Bobby L. (who is employed at ORGDP). Funeral services were held at the Oak Ridge Church of God, with burial at the Oak Ridge Memorial Park.



Richard D. Jacobs

## Division Deaths

Harve A. Dalton, a bus and truck driver in the Finance and Materials Division at ORNL, died December 13 at his Knoxville home. He had worked at the Laboratory since February, 1944.



Mr. Dalton

Mr. Dalton, a native of Knoxville, was a member of McCalla Avenue Baptist Church, Knoxville. He enjoyed boating and motorcycle riding.

Survivors include his wife, Mrs. Betty J. Dalton; three daughters, Mrs. Pam Green, Mrs. Donna Ballinger and Mrs. Carol McGill; a son, Warren A. Dalton; a foster daughter, Mrs. Lester Rice; four foster sons, Charles, Curtis and Frank Julian, and Sina Moghoddam; three sisters; and five brothers - including his twin, Howard V. Dalton.

Funeral services were held December 15 in the chapel of Rose Funeral Home in Knoxville, with the Rev. Wayne Markham officiating. Burial followed in Lynnhurst Cemetery.

The Dalton home is at 6992 Cain Road, N.W., Knoxville.

## FORMER SAFETY ENGINEER

Everett G. Richardson, former safety engineer in the Y-12 Plant, died at his Norris home December 20. He retired from Y-12 almost nine years ago. He was a native of Leominster, Mass. Survivors include his wife, Dorothy, and a son, Everett G. Richardson Jr., employed at ORNL, and another son, Briggs Richardson. A memorial service was held at the Norris Religious Fellowship Church, and the body was cremated.



**PROPOSED SCULPTURE** — John Rietta's "Unravelling" is shown in a composite photograph where it will sit on the pad near the Oak Ridge Civic Center. Bob Samples, Y-12's graphic arts, and Bill Shipley, ORNL photography, were responsible for the dramatic composite which shows what the sculpture will be like.



## Social security rate history

If you have been employed for the past 25 years or more, nobody has to tell you that social security rates have increased rapidly.

As a matter of fact, they have gone up by almost 3000 percent in the past two and one-half decades. Wage earners paying the maximum amount

in 1949 contributed one percent of their base earnings of \$3,000 . . . or \$30. This year, that same employee will pay a total of \$825.85 on a \$14,100 base.

Of course, each cent contributed by the employee must be matched, penny for penny, by Union Carbide.

### History of Social Security Taxes

Year	Tax Rates			Tax Base	Maximum Annual Tax Employer-Employee Each
	Pension Rate	Hospital Insurance Rate	Combined Rate		
1937 - 49	1.0 %			\$3,000	30.00
1950	1.5			3,000	45.00
1951 - 53	1.5			3,600	54.00
1954	2.0			3,600	72.00
1955 - 56	2.0			4,200	84.00
1957 - 58	2.25			4,200	94.00
1959	2.5			4,800	120.00
1960 - 61	3.0			4,800	144.00
1962	3.125			4,800	150.00
1963 - 65	3.625			4,800	174.00
1966	3.85	.35%	4.2%	6,600	277.20
1967	3.9	.5	4.4	6,600	290.40
1968	3.8	.6	4.4	7,800	343.20
1969 - 70	4.2	.6	4.8	7,800	374.40
1971	4.6	.6	5.2	7,800	405.60
1972	4.6	.6	5.2	9,000	468.00
1973	4.85	1.0	5.85	10,800	631.80
1974	4.95	.9	5.85	13,200	772.20
1975 - 77	4.95	.9	5.85	14,100	824.85
1978 - 80	4.95	1.1	6.05		
1981 - 1981					
1981 - 85	4.95	1.35	6.30		
1986 - 2010	4.95	1.5	6.45		
2011 and after	5.95	1.5	7.45		

NOTE: Since January 1, 1975, the tax base rises automatically to keep in step with the Consumer Price Index.

## Paducah credit union meeting is January 26

The Paducah Plant Credit Union will hold its annual meeting Sunday, January 26, at the Jaycee Civic Center, Park and Mathis Drive, Paducah. It will get underway at 1:30 p.m. The public is invited, but only members are eligible to vote and take part in drawings for attendance prizes.

The nominating committee, consisting of James R. Luton, James H. Thomas, Mary E. McDougal, Robert W. Parks and Morris F. Shelton has submitted the following slate for consideration: for board members (three to be elected): Charles W. Burdette, James R. Reese, Lois M. McCann, Robert E. Ligon and Bill Etter. For the credit committee (one to be elected): Paul A. Bielefeld, Tom R. Wright and Ed Wilkins. Nominations may also be made from the floor.

Drawings for attendance prizes will include \$100 in cash for first place, and 20 \$20 bills for the next prizes.

The Credit Union announces another successful year, with an increase in membership of 236. A 6.5 percent interest was paid on savings and a 25 percent refund on interest on loans was also announced.

## Blood donor drive set for January 16

The American Red Cross has set another Blood Drive in Oak Ridge for January 16. This visit will be only one day, and will feature hours from 3 to 9 p.m.

Oak Ridge has a total coverage whereby all residents are covered for blood needs (his spouse, children, mother, father, grandparents, in-laws, etc.) no matter where they live.

The procedure takes only about 45 minutes of your time, and provides medical science with the difference sometimes between life and death.

The Red Cross volunteer blood program means that some day, when you or your family member needs blood, it will be available immediately. Every year patients at the Oak Ridge Hospital use more pints of blood than are collected in blood drives. Not only does the Red Cross need donors, but volunteers to work in preparation for the drives and at the actual blood mobile visits. Call the Red Cross today at Oak Ridge 483-5641.

It's as simple as that. You may, in time, save your own life, or the life of a family member.

## Engineering at ORNL cites new organization changes

Myer Bender, Site Manager for Nuclear Division Engineering at ORNL, has announced several organizational changes.

Hugh C. Beeson has been appointed superintendent of Experimental Engineering. He was previously superintendent for Mechanical Engineering and chief design engineer of the Production Support Facilities Project at ORGDP.

Beeson's new responsibilities include serving as discipline superintendent of experimental engineering for the Development, Research and Experimental Design Engineering departments. Experimental Engineering provides design engineering support for all ORNL divisions and acts as a lead engineering group which interfaces with other Nuclear Division design engineering organizations.

Beeson received the B.S. degree in mechanical engineering from North Carolina State University and an M.S. degree in industrial management from The University of Tennessee. He joined the Nuclear Division staff at the Y-12 Plant in 1958.

The following department heads have been appointed in Experimental Engineering: Frank C. Davis, Development Engineering; Loyd V. Wilson, Experimental Design Engineering and Donald D. Cannon, Research Engineering. Layton N. Howell is in charge of Special Projects and Advanced Planning.

Thomas W. Pickel has been named superintendent of the Engineering Analysis Department.

Pickel received the B.S. degree in chemical engineering from Vanderbilt University, the M.S. in mathematics from The University of Tennessee and the Ph.D. in theoretical and applied mechanics from the University of Illinois.

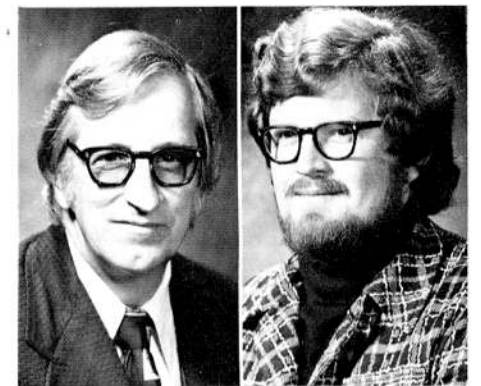
A native of Kingston, Pickel worked for Humble Oil and Refining Company before joining the staff at ORNL in 1959.

Pickel's responsibilities include supervising the thermal hydraulic analysis and nuclear engineering section, which is headed by W. K. "Mickey" Crowley; and the structural



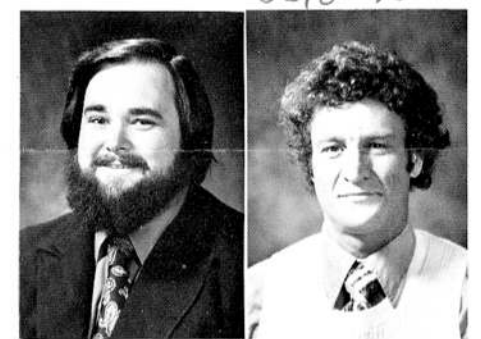
Beeson

Pickel



Davis

Stoddart



Crowley

Siman-Tov

analysis section, which is headed by W.C.T. Stoddart. Pickel's Department performs services for other parts of the Engineering Organization and for the operating divisions at ORNL.

Pickel is a member of the American Institute of Chemical Engineers, the American Society of Mechanical Engineers and the Tennessee Society for Professional Engineers. He has served on the following committees: ANSI-B31 - Mechanical Design for Pressure Piping, and the ANS-2 Committee for Reactor Site Evaluation.

## Y-12 credit union gears for meeting

The Y-12 Credit Union has announced its annual meeting for January 23 at 7 p.m. at the Robertsville Junior High School, Oak Ridge.

The nominating committee, consisting of J. B. Hopkins, Phyllis C. Johnson and J. W. "Bill" Ebert, has submitted the following names for consideration: Earl E. Emerson Jr., Nancy A. Garrison, and Herb R. Gwinn, all for three-year terms. The name of Harley Orange has been submitted for nomination by petition. To the credit committee, the nominations are Lois Beckett, for a two-year term, and J.M. Petty, for a three-year term.

Door prizes at the Y-12 meeting will consist of additions to the share

account, for members, the first prize consisting of \$300, and the second one for \$150. A third one for \$75 will be made, and four will be awarded in the amount of \$25, while five will be given in the amount of \$10.

In addition, 25 silver dollars will be given away at the January 23 meeting.

Caution and conservatism are expected of old age; but when the young men of a nation are possessed of such a spirit, when they are afraid of the noise and strife caused by the applications of the truth, heaven save the land! Its funeral bell has already rung... Henry Ward Beecher



## COMPANY Service

20

25

30

ORGDP  
30 YEARS

Mat B. Morton, machine shop department; Brawley L. Cooper, Oak Ridge area electricity distribution department; Vernie L. Smith, instrument fabrication department; Carlyle H. Dowdy, isotope analysis department; and Whitney J. Robertson, cascade maintenance department.

George W. Harris Jr., technology evaluation department; Leo B. Chamberlain, Oak Ridge area electricity distribution department; Luther J. Robinson, chemical operations administration; Thomas R. Cantrell, shifts superintendents department; Robert E. Davis, mechanical services department; Edgar F. King, administrative services; Chester Benjamin, grounds maintenance department; Joe C. Reeves, building maintenance department; Douglas B. Janney, capacity expansion; Thelma C. Trusley, chemical analysis department; John M. Matlock, T1A barrier manufacturing; Robert L. Cabe Jr., Oak Ridge area electricity distribution department; John N. Jones, shop services department; Hal C. Manley, U-235 separation department; Garland C. Fugate, chemical and technical maintenance; Fred R. Sanders, chemical and technical maintenance; Guy Turner, development maintenance; James E. Rogers, T1A barrier manufacturing; Lester D. Blakeney, U-235 separation department; William H. Guy and Ernest H. Smith, chemical and general field maintenance.

## 25 YEARS

William H. Harber.

## 20 YEARS

Samuel B. Woodfin, Charles H. Burbage and John S. Francis.

GENERAL STAFF  
30 YEARS

Agnes W. Grose, Computer Sciences Division; and Robert L. Green, General Accounting Division.

Mabel R. Stokes, Purchasing Division.

## 20 YEARS

A. Paul Bass Jr.

William L. McKinstry Jr. and John M. Childress.

Y-12 PLANT  
30 YEARS

Edmon B. Kimbro, building, grounds and maintenance shops; myrtle S. Leach, chemical services; Hennie T. Ward, Wardell Caldwell and Lou Emma Goley, building services; D.C. Wolfenbarger, Beta 2 expansion assembly; Blake E. Mitchell, Y-12 Engineering Division; Charles Asmanes, fabrication division engineering; Anna M. Bishop, production analysis; and John T. Byrum, guard department.

## 25 YEARS

Jesse J. Cox, Alvin E. Hendrickson, Lyman E. O'Dell and Samuel C. Simons.

## 20 YEARS

William S. Everett Jr., Lafayette E. Pate, Robert E. Dripps, William C. Fraley, Willie Chambers, Bert Searles, Fitchue L. Rigney and Clyde E. Carter.

PADUCAH  
30 YEARS

Richard C. Baker, health physics; and Ralph H. Vaughn, vacuum pump refrigeration shop.

## 20 YEARS

Marianne Curtis.

ORNL  
30 YEARS

William C. Davis, Stable Isotopes; James F. Lockmiller, Chemical Technology; Richard N. Lyon, Environmental Impact Project; Kenneth C. Shell, Biology Division; Claude W. Workman, radioisotopes processing department; William L. McKinney Jr., Biology Division; and John M. Groover Jr., instrument department.

## 25 YEARS

James B. Flynn, Evelyn T. Houchin, Kermit B. Campbell, William L. Hylton, Chesley R. Richard and Ova G. Duck.

## 20 YEARS

Homer E. Harman, Shields O. Lewis, W. J. Mason, Jack P. Young, John L. Wantland, Resi Lissner, Ralph G. Shooster, Helen F. Kuhns, Wilburn Borum and R. Wallace Harvey.

## Division Deaths

Henry R. King, who had planned to retire at the end of last month from Y-12's dimensional inspection department, died December 27, at a Knoxville hospital. 274-109



Mr. King

Garrison.

Funeral services were held at Ball Road Baptist Church with the Revs. Melvin Carr and Dewey Cooper officiating. Interment was in the Knoxville Memorial Cemetery.

He is survived by his wife, Mae-belle King, Route 20, Lobetti Road, Knoxville; a son, Wayne King; brothers, Wiley, Joel, Charlie and Raymond King; and sisters, Mrs. Jake Ellis, Viola Kitts and Lannie

## ORNL's Larson named to Sidhu award honors

Bennett C. Larson of the Solid State Division at Oak Ridge National Laboratory received the 1974 Sidhu Award at the Pittsburgh Diffraction Conference recently. The award is a cash prize presented annually to a scientist under 33 years of age who has made outstanding contributions to the field of diffraction, the study of the structure of solids.

Larson joined the Solid State Division in 1969 and is now the leader of the X-ray diffraction group. He has performed a number of studies in which x-ray scattering techniques were used to investigate defects caused by radiation in metallic crystals. During these studies, he invented a method of making precise measurements of certain structural changes that previously could be obtained only by tedious, less precise methods.

One of the primary applications of diffraction is in the field of radiation damage research. Materials used in the construction of reactors are studied to determine the effect of radiation damage on physical properties such as strength and dimensional stability. The ultimate application of this research is the more efficient production of power obtained by operating reactors at higher temperatures for a greater number of years.

This is the third time a member of the Solid State Division has received the award since the fund was set up in



Bennett C. Larson

1967 in memory of Surain Sidhu, one of the founders of the Conference. Other recipients were Robert M. Nicklow in 1968 and Thomas O. Baldwin, currently at Southern Illinois University, in 1969.

Bennett and his wife, Pat, live at 122 Montreal Lane in Oak Ridge. They have one son, Christopher.

## Gardiner elected to ASA directors

Donald A. Gardiner, mathematics and statistics research department in the Nuclear Division's Computer Sciences Division, has been named to the board of directors of the American Statistical Association. Representing the Section on Physical and Engineering Sciences, he will serve a three-year term.



Gardiner

ASA, with 11,000 members, was founded in 1839. The SPES has 3,500 members. Gardiner has been active in SPES affairs for some time, serving as a member of the advisory board, secretary-treasurer, chairman of programs, and as chairman in 1971. He also serves as editor of *Technometrics*, one of the ASA's technical publications.

Gardiner, a Fellow in ASA since 1967, holds a B.S. and M.B.A. from the University of Buffalo, and a Ph.D. in mathematical statistics from North Carolina State University. He is a native of Buffalo, N.Y. and has been with Union Carbide since 1956.

## SPANISH CONVERSATION

Would you like to brush up on your conversational Spanish? If you would and you eat lunch at the ORNL Cafeteria, join the "Spanish Conversation Table." Participants will meet each Thursday at 12 noon. For additional information call the ORNL Translation Office at 3-1393.

Calendar of  
EVENTSTECHNICAL  
January 13

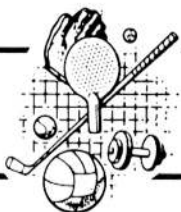
ORNL Operations and Management Seminars: "Laboratory Overhead," W. R. Ragland. Central Auditorium, Building 4500N, 3 p.m.

COMMUNITY  
January 10

Oak Ridge Playhouse presents: "That Championship Season." Playhouse 8:20 p.m. Admission: \$3. Other performances January 11, 17, 18, 24 and 25.



# RECREATIONOTES



## ORNL BOWLING

The ORAU team has climbed atop standings in the A League, a mere one and one-half points out front, as the Woodchoppers are the only team left in competition.

The Damagers did it again! The C League went to the Damagers, by a mere one point away from the Pin Heads, only one point ahead of the Remkeys. Darrel Arthur made a great night of rolling in the season's first half ending, rolling a game of 247 ... a series of 607, scratch, of course.

ORNL Ladies' League saw the Pickups pick up more lead, extending their margin over the Bowling Aces by a point and a half. Mary Long rolled a 209/252 game.

The Oops team still controls the Carbide Family Mixed League, a night ahead of the Untouchables. George Reece and Sally Stockstill were stars as the league rolled to a stop for the big holidays.

## CARBIDE VOLLEYBALL

Three big volleyball leagues fired off pre-holiday competition to spark intra-plant competition.

### NUCLEAR LEAGUE

	W	L
Rad Fizz	6	0
Electric Bananas	3	0
Jokers	5	1
Pogo's	4	2
Maxwell Demons	0	3
Anti Quarks	0	3
OVESD	0	3
Bawlers	0	6

### CARBON LEAGUE

T.A.T.	3	0
Computes	3	0
Soulistics	4	2
The Group	3	3
Bombers	3	3
Artie's Army	1	2
Adam Smashers	1	5
M & C's	0	3

### ATOMIC LEAGUE

Diggers	6	0
The Pub	2	1
Taxi Squad	5	4
Rejects	3	6
Quarks	2	4
Old Men	0	3

## PADUCAH BOWLING

At mid-season the Paducah Bowling League sees the Scrappers on top by 13 and one-half points over the improving Googins. The Scrappers consist of Captain Jack Weglarz, Dale Meyers, Dave Wallace, Bob Douglas, Frank Henson and Scott Ray. To date, Bob Riepe is tops in individual rolling with a 718 handicap series. Glen Young leads in high games with a 278 handicap total.

## Y-12 BOWLING

The Rollers took top honors in the Mixed League's first half by a good margin.

The Rounders are one-half point leaders in the Classic League, with the Rollmasters and Badgers begging for a chance at first place.

The Eightballs are two-point leaders in the C League, with the Ridgers close by and the Rebels almost up there too.

## PRESIDENTIAL AWARDS

Jogging seems to be the big word, as more Nuclear Division employees receive Presidential Sports Award certificates, attesting their proficiency in a chosen sport.

Taking jogging certificates were Stanley I. Auerbach, Robert L. Love, Ronald K. McConathy, Francis E. McKinney, V. L. Ridenour, Norman G. Allmon, Stephen V. Kaye, Tom Kitchings, Paul S. Rohwer, John E. Till and William T. Henry, all from the Oak Ridge National Laboratory. John H. "Tudor" Boyd, Tim R. Butler and R. M. Schilling Jr., from the Oak Ridge Gaseous Diffusion Plant, also jogged for certification.

Y-12's Paul E. Reagan took an award for equitation, and Gary W. Dean, also from Y-12, qualified in tennis.

Mary P. Haydon, ORNL, took tennis certification.

The Raasens, ORNL, Helen and Vern, qualified in skeet shooting.

## CARBIDE BASKETBALL

Five teams stand undefeated in the two basketball wars up to the holiday season.

### NUCLEAR LEAGUE

	W	L
Retreads	3	0
Al's Pals	3	0
Rodent House Gang	3	0
A.P.H.D.S.	2	1
The Gunners	2	1
SDOGFU	2	1
Shifters	2	1
Just-for-Fun	1	2
Tired Old Men	0	3
TAT	0	3
Friends	0	3
Isomets	0	3

### ATOMIC LEAGUE

Raiders	3	0
Has Beens	3	0
GBU's	2	1
Jayhawks	2	1
Testers	2	2
The 970	1	2
Black Men	1	2
All Star Bombers	1	2
Soul Children	1	2
Lab Protection	1	2
Long Shots	0	3

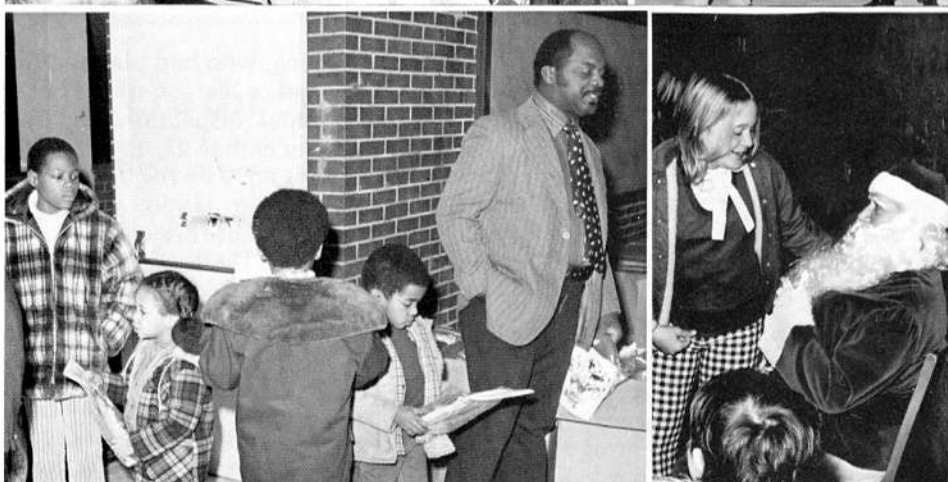
## ORGDP BOWLING

The Planners and the Amps tie for first place honors, with the Mix-Ups only a half-a-point behind as the season's first half draws close to an end. Stan Finch rolled a 241 recently, Wayne Weatherford a 639 series ... all for the Wednesday League.

The Tuesday League goes safely to the All Stars, miles ahead of everyone else. L. Owens, All Stars, recently rolled a 597/666 series.

The Payoffs are scant leaders in the ORGDP Women's League ... as the race tightens slightly. Mary Foley rolled a 201/220 game, a 572/629 series recently.

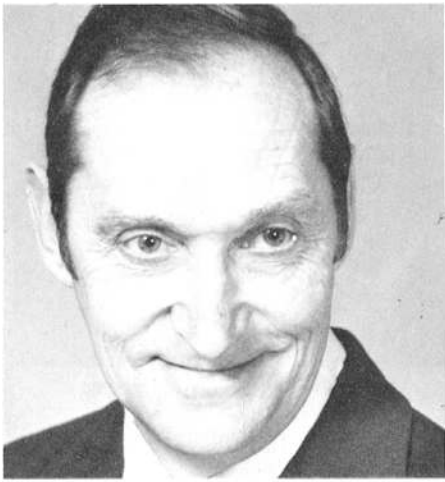
Sunshine is delicious, rain is refreshing, wind braces us up, snow is exhilarating; there is no such thing as bad weather, only different kinds of good weather ... John Ruskin



**POODLES FOR CHRISTMAS** — Carbide kids in the Oak Ridge area saw Santa's visit sparked with a poodle act, plus an act of magic of Austini himself, a Union Carbider who "moonlights" with an act of slight-of-hand. Most of the five parties on December 23 at the Oak Ridge High School were "sell-outs." "Visions of sugar plums" were filled for each child with a Christmas gift of candy, games and other goodies. A request for carolers was met with many eager volunteers who sang a hearty chorus of 'Jingle Bells.'



## Northcutt named to A shift post in ORGDP's Operations



William T. Northcutt Jr.

William T. "Red" Northcutt Jr., has been named a shift superintendent for A Shift, according to A. J. Legeay, superintendent of Operations Division at the Oak Ridge Gaseous Diffusion Plant.

Northcutt, a native of Corinth, Miss., worked with Fisher Aircraft, Memphis, before joining Union Carbide in 1945.

He and his wife, the former Dorothy Marlar, live at 100 Morningside Road, Oak Ridge. They have three children, Theresa, who teaches in the Atlanta public school system; Tommy, a senior at Middle State University; and Paula, who works at the Oak Ridge Hospital.



Davidson

Beidel

Six ORNL veterans retired January 1.

Robert H. Beidel was a labor relations specialist in the Employee Relations Division. He joined the staff on November 1, 1946. The Beidel home is at 100 Nasson Lane, Oak Ridge.

Hester Davidson retired as a maintenance foreman in the Plant and Equipment Division. He had over 30 years of company service with the Nuclear Division. Davidson and his wife, the former Ruth Vaughn, have one son. They reside at 400 New York Avenue, Oak Ridge.

E. John Henry, a skilled laborer in the Plant and Equipment Division, came to work at ORNL in 1944. He is the father of five children. Henry lives at 2722 McCalla Avenue, Knoxville.

Richard Jones had worked as a laborer in Plant and Equipment since July 1950. He has two children. The Jones' home is at 1106 Texas Avenue, Knoxville.

James Moore retired as a materials handler in the Finance and Materials Division. He had worked at ORNL since September, 1944. He and his wife, Mary Ellen, reside at Route 3, Madisonville.

Vernon E. Stokes was a shops foreman in the Plant and Equipment Division. He came to work in the Y-12 Plant in 1944, and has been at ORNL since 1946. Stokes and his wife, Lois, live at 10413 Kingston Pike, Knoxville. They have six children - two of whom (Lloyd and Jack) work in the Y-12 Plant.



Henry

Jones



Moore

Stokes

### MEDICINE CHEST

Due to technical difficulties at the printer's, THE MEDICINE CHEST does not appear in this issue of the paper. It will, however, be printed in this space in the next issue.

### THE LAST WORD

The way to make a true friend is to be one. Friendship implies loyalty, esteem, cordiality, sympathy, affection, readiness to aid, to help, to stick to fight for, if need be. The real friend is he or she who can share all our sorrows and double all our joys. Radiate friendship and it will return seven fold . . . B. C. Forbes



**CHRISTMAS AT PADUCAH** — Union Carbide children in the Paducah area enjoyed a Christmas celebration December 14 at the Arcade Theatre. More than 380 youngsters devoured hot dogs, bushels of pop corn and gallons of soft drinks. Then came the magical visit of old Santa himself.

### NUCLEAR DIVISION SAFETY SCOREBOARD

Time worked without a lost-time accident through January 2:

Paducah . . . . .	149 Days	1,150,000 Man-Hours
ORNL . . . . .	27 Days	400,000 Man-Hours
ORGDP . . . . .	37 Days	668,940 Man-Hours
Y-12 . . . . .	31 Days	926,000 Man-Hours

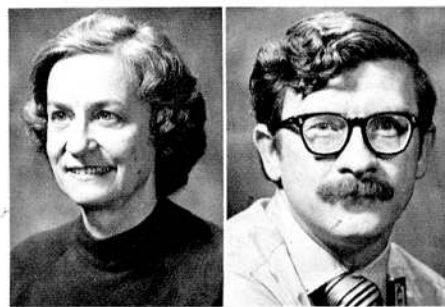


## McKinney, Mrs. Raaen are named to Information Division posts

Francis E. McKinney was named manager of the technical publications department, Information Division, upon the recent retirement of R. B. Parker. Helen P. Raaen was named supervising editor. The technical publications department is responsible for editing, makeup, and composition of reports, impact statements, technical papers, and other documents issued by the Oak Ridge National Laboratory.

McKinney has a B.S. in mathematics from Auburn University and has completed course work toward a masters degree in English literature. After his graduation in 1962, he was employed at the George C. Marshall Space Flight Center as a research mathematician, working on equations describing the behavior of the molten film on a re-entering nose cone. He joined the ORNL Isotopes Information Center in 1965 and was involved in indexing accessioned documents and answering information requests received from around the world with information retrieved from the Center's holdings. As an associate editor, he also wrote and edited articles for *Isotopes and Radiation Technology* — the AEC quarterly technical journal prepared by the staff of the Center. In 1972, McKinney began editing environmental impact statements as that program burgeoned at the Laboratory.

McKinney is a member of the Society for Technical Communication and serves as editor of East Tennessee Chapter's quarterly newsletter, *Transcript*. He is also serving as the chairman of the local technical publications competition committee. He has been a member of the Na-



Mrs. Raaen

McKinney

tional Speleological Society since 1958 and was named a Fellow of the NSS in 1971.

McKinney was born in Fort Myers, Fla. He is married to the former Jill Dudrow; they have a daughter, Julie, and a son, Terry. The family resides at 102 Olean Road, Oak Ridge.

A native of Roanoke, Va., Mrs. Raaen received B.A. & M.A. degrees in chemistry from Duke University and completed course work for the doctorate at the University of Minnesota. She taught at the University of Montevallo, Ala., and was a group leader in Analytical Chemistry Research with the DuPont Company. In 1951, she joined the ORNL Analytical Chemistry Division, where she was a Research Associate and Technical Editor. From 1970-71 she served in the Isotopes Information Center as Associate Editor of *Isotopes and Radiation Technology*. She joined the Technical Publications Department in 1972.

Mrs. Raaen has published extensively in the field of analytical chemistry research and is a responsible reviewer for the *Analytical Chemistry Journal*. She was elected a Fellow of the American Institute of Chemists and is an active member of several honorary and professional societies, including Sigma Xi, the American Chemical Society, American Association for the Advancement of Science, and the Society for Technical Communication.

Mrs. Raaen is married to Vernon Raaen, a member of the Chemistry Division, with whom she co-authored the book *Carbon-14*. They have one son, Nial, and reside at 111 Scenic Drive, Oak Ridge.

## Spot bid sale now in progress

A used government-owned office equipment and vehicle sale is now in progress on a spot-bid basis.

Included in the sale, which continues through January 21, are dictating machines, electric and manual typewriters, metal desks and an ice machine, as well as sedans, pick-ups, one station wagon and tractors. The sale begins at 9 a.m. January 22.

Items may be inspected at the Power House area at the Oak Ridge Gaseous Diffusion Plant, Building K-722, located off Highway 58, from 8:10 a.m. to 4 p.m. every day except Sunday, prior to the sale.

Additional information may be obtained from D. R. McCammon, extension 3-4601.

## Hornsby, Mrs. Pease promoted to new jobs at Paducah plant

Two recent promotions have been announced at the Paducah Gaseous Diffusion Plant. John W. Hornsby has been named a security analyst in the Employee Relations Division, and Wilma L. Pease has been promoted to an engineering record services supervisor.

Hornsby was born in Little Rock, Ark., and attended the Cradwohl Laboratory and Paducah Community College. He has also done internship at the Obion County Hospital, Union City, Tenn.

He was employed at the Proctor and Gamble Plant with Blaw-Knox Construction, before joining Union Carbide in 1953.

Hornsby and his wife, Nell, live on Jefferson Avenue, Paducah.

Mrs. Pease is a native of Pittsburg, Kan. She attended Draughon's Business College and the Paducah Community College, and is a Certified Professional Secretary. She is an active member of the Paducah-Kentucky Lake Chapter of the National Secretaries Association.



Hornsby

Mrs. Pease

She and her husband, Jessie, live at 310 Milton Drive, Paducah.

## Cell repair study

(Continued from page 2)

living on an island off the coast of Panama which has the highest known incidence of albinos of any group of people in the world.

"One percent of the Cuna Indian population are albinos," he said, "and they apparently suffer the same risk and incidence of sunlight-induced cancer as people with XP disease. We would like to know whether their cells also lack the UV-endonuclease necessary to initiate DNA repair, like the people with XP disease, or whether they have a normal repair system which becomes oversaturated because their bodies have no pigment to shield their DNA from the sunlight."

Regan emphasized that the research work does not promise any fast cure in the near future for persons afflicted with XP or cancers resulting from albinism. The answers he does obtain, however, should contribute to a better understanding of the operation of an amazing and intricate piece of machinery — a human cell.

## ORNL's credit union sets annual meeting

The ORNL Employees Federal Credit Union Annual Meeting will be held Thursday, January 30, 1975 at the Oak Ridge Civic Center. Registration will begin at 6:45 p.m. and the meeting will start promptly at 7:30 p.m.

The major order of business will be the election of members to serve on the Board of Directors and the Credit Committee. Each attending member 16 years of age or older will be entitled to one vote for each of the offices to be filled. The nominating committee composed of J.E. Keeton (chairman), C.W. Benson, R.P. Jernigan, Jr., C.S. Lissner and B. K. Lyon will present a slate of candidates for consideration by the members. Any voting member may nominate a candidate (candidates must be at least 16 years of age). If you wish to present a candidate, please get his or her permission before the nomination.

Drawings for door prizes will be held. Employees who are working shifts may become eligible for the drawings by signing a ticket at the Credit Union's Oak Ridge Office the day of the meeting. All members present at the meeting will be eligible for participation.



**UNION CARBIDE CORPORATION**  
NUCLEAR DIVISION  
P. O. BOX Y, OAK RIDGE, TENNESSEE 37830

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